AUSTRALIAN PLANT DISEASE RECORDER

Volume 12, Number 1 January, 1960

Edited by
P.G. Valder, Biological Branch
Department of Agriculture,
Box 36, G.P.O., Sydney

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For confidential circulation to plant pathologists in Australia PLEASE DO NOT ABSTRACT

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CEREALS AND GRASSES

PUCCINIA POLYSORA UNDER. RECORDED IN NORTH QUEENSLAND

In the early part of 1959 an unusual epiphytotic of maize rust occurred on the Atherton Tableland and Mareeba district of North Queensland.

A feature of the macroscopic appearance of this rust was the abundance and uniform distribution of the small rounded uredia on the foliage. Larger elongated pustules were present on leaf stalks, cob husks and tassels. It is usual for the pustules of Puccinia sorghi - the species normally present - to be larger, elongated and tending to be aggregated in scattered groups on the lamina. Husks and parts other than leaves have not been seen noticeably affected.

In the light of this evidence it was thought that Puccinia polysora might be involved in the abnormal outbreak. On account of the absence of marked differences in the spore dimensions of the two species the evidence from a comparison of spore measurements was considered inconclusive.

Specimens were submitted to the Commonwealth Mycological Institute for expert opinion. The Director has now reported that Messrs. Deighton and Laundon who examined the material confirm the presence of Puccinia polysora.

Judging from the ability of this organism to destroy the maize crop last season, the outlook for maize grown in the near future is far from bright.

- W. PONT

Department of Agriculture and Stock,

CAIRNS.

BARLEY YELLOW DWARF VIRUS IN TASMANIA:

The presence of the Barley Yellow Dwarf Virus in Tasmania has been suspected since 1957 and symptoms probably due to the virus were observed in oats at least eight years ago.

The virus has now been isolated and identified from wheat, oats, and barley collected from areas throughout the State. The symptoms shown by infected plants in the field were in many cases obscured by drought but oats showing reddening of the leaves and barley and wheat showing a bright yellow chlorosis of the leaf tips have been found to be infected.

The vector used was Rhopalosiphon padi L. and the virus was acquired in a feeding period of 24 hours. The test plant used was a white oat variety which, when infected, showed a characteristic pinkish-orange discolouration of the leaves, starting at a point approximately one third of the way down the leaf blade and rapidly developing into a reddish discolouration of the whole leaf blade with necrosis of the tip.

Investigations are proceeding to determine the relative susceptibility of and symptoms shown by the main cereal varieties used in the State.

- IAN D. GEARD

Department of Agriculture,

HOBART.

VEGETABLES

CUCUMBER MOSAIC:

In the mosaic-liable market-garden district of Balcatta early plantings of cucumbers are seriously damaged in most seasons by mosaic. This season the disease was so bad, following an aphid plague, that many crops were ploughed under as a total loss.

A yield experiment was conducted at the Vegetable Research Station, Herdsman's Lake, to compare the mosaic-tolerant cucumber variety Ohio MR 200, obtained from the Ohio Experiment Station, with popular, but susceptible local varieties. 100% mosaic infection was induced by sap inoculation. Results are shown in the table:-

Variety	Total Yield	Frist Quality Fruit
Ohio MR 200	94 lbs.	85%
Davis Perfect	12 "	12%
Marketer	7 "	37%
Palmetto	3 "	nil

In a gardener's trial at Balcatta two rows of Ohio plants (60 approx.) were grown in the middle of an early commercial planting of Davis Perfect cucumbers. The natural mosaic incidence was high due to an early infestation of aphids and, while Davis Perfect deteriorated rapidly, Ohio grew normally. After two or three picks the grower abandoned the whole area due to the failure of Davis Perfect but up to this stage the Ohio yield was about double that of Davis Perfect.

Ohio MR 200 is an attractive dark green fruit but in a trial conducted in 1957-58 season in the absence of mosaic its yield was 88% of that of Davis Perfect, and it matured a week later. It is of doubtful advantage therefore in mosaic-free districts.

H.L. HARVEY

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PERTH.

SURVIVAL OF CORYNEBACTERIUM MICHIGANENSE:

It is usually accepted that the survival of C. michiganense in soil is limited to a period of one or two years but an instance has come to notice where survival for three years has occurred in regularly cultivated soil.

In January 1957 four adjacent plants in a crop of tomatoes were killed by bacterial canker and, on their removal the contaminated site was carefully noted. From that time until November 1959 the soil was worked regularly and planted with a series of non-solanaceous vegetables. In November 1959 tomato seedlings which had been raised in sterilised soil from seed known to be free of the canker bacterium were planted in the contaminated area. Symptoms of bacterial canker were observed at the end of December and C. michiganense was isolated from the two adjacent affected plants.

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SYDNEY.

BACTERIAL POD TWIST OF BEANS:

During January, 1960, a crop of Brown Beauty beans growing at Bega, on the Far South Coast, was seen to have quite a high proportion of distorted pods. The distortion was mainly in the form of a sharp bending of the pod to give J and L shapes and in the angle of the bend a distinct water-soaked area was present. In this area, many bacteria were seen. No other symptoms were present on the plants.

On symptoms, the disease is very similar to that described by Johnson (Q'land J. agric. Sci. 13, 127-158, 1956) from Queensland and called pod twist. Similar symptoms have been seen on bean pods in N.S.W. for several years and thought to be mechanical injury caused by thrips feeding on young pods. It appears that bacterial pod twist is probably present in this State and tests to confirm this are at present being made.

J. WALKER.

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FRUIT

NEW DISEASE RECORDS:

Verticillium die-back of Olives: During the war years tomatoes were extensively grown in the M.I.A. to supply the needs of the armed forces. Subsequent plantings of stone fruit, particularly apricots, in old tomato land developed high percentages of black heart due to the attack of Verticillium dahliae. Planting of Verticillium-susceptible crops in land where tomatoes had been grown was therefore discouraged.

During the past few months cases of die-back in young olive trees in 5 separate plantings have proved to be due to Verticillium dahliae. In each case tomatoes or capsicums had previously been grown.

The disease, as in apricots, progresses fairly slowly, one or two limbs dying out while new growth is still being made in other parts of the tree. The fungus is readily isolated from quite small twigs, and the amount of discoloration in the wood of twigs and branches is much less than that usually seen in apricots, maples, etc.

Anthracnose of Figs: Specimens of fig showing anthracnose- type lesions on young shoots and petioles were received from Taree during October, 1959. Brown lesions very similar to those of bean anthracnose occurred along the veins on the undersurfaces of young leaves. Colletotrichum gloeosporioides was associated. Glomerella cingulata is recorded in the N.S.W. check list as a cause of ripe rot of figs, but leaf and shoot attack has not been seen previously.

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ORNAMENTALS

FUNGAL LEAF SPOT OF CYCLAMEN:

Leaves of Cyclamen neapolitanum recently submitted for diagnosis from Westbury (Tas.) had more or less circular, light brown lesions 5 - 12 mm in diameter. Most lesions appeared to be centred on a small injury but some had apparently originated from infection of initially sound tissue. In cases where the midrib or a main vein had been infected, death of a triangular area of tissue reaching the edge of the leaf, had resulted. Whilst most lesions were of a uniform light brown colour some showed prominent banding with alternate light brown and dark brown concentric circles, each band being 1-2 mm wide.

The lesions bore immersed, globose, ostiolate, dark brown pycnidia 110-160 u in diameter. Pycnospores were hyaline, oval or cylindrical with rounded ends, mainly one-celled but with 1-2% having a single transverse septum.

When surface sterilised tissue pieces were plated on P.D.A. a dark-coloured mycelium was consistently isolated. No sporulation occurred on this medium but when subcultures were incubated out-of-doors on a medium consisting of chopped cyclamen leaf, sterilised with propylene oxide and covered with water agar, pycnidia were formed in abundance on and adjacent to the leaf pieces.

When plants of C. persicum were sprayed with a spore suspension prepared from these cultures and kept covered with plastic bags for 24 hours infection resulted. Typical leaf spots developed slowly, mainly from infection at pin-prick injuries made immediately before inoculation but a few lesions resulted from penetration of apparently uninjured tissue. Typical pycnidia occurred on the artificially induced lesions and the organism was re-isolated in culture. From the general morphology of the organism and in particular the presence of some 2-celled spores it is assumed that the causal organism is an Asochyta. I have been unable to find any previous record of the occurrence of an Asochyta on Cyclamen spp.

- IAN D. GEARD.

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HOBART.

AZALEA FLOWER BLIGHT FOUND IN NEW SOUTH WALES:

Azalea flower blight (Ovulinia azaleae Weiss), which may cause complete spoilage of azalea and rhododendron flowers in some seasons, was recorded for the first time in New South Wales from Wahroonga in November, 1959. Further specimens were collected from Pennant Hills and Mount Wilson. Flower blight may be present in other areas, too, but no survey of its distribution has been made.

Ovulinia azaleae attacks the flowers only. It is not known to enter the young twigs. Infection is first noticed as a brown slimy decay of a single petal or petal tip. Under warm, moist conditions (typical of last spring) this wet decay spreads rapidly to spoil the entire flower. The formation of sclerotia may follow in 24-48 hours if moist conditions continue. The browned petals dry out becoming limp and "tissue-paper" like, while the black sclerotia at the petal bases are quite conspicuous. These spoiled flowers adhere to the bush for some weeks.

The fact that no search has previously been made for this disease, the season was unusually favourable for it, and it was found in the only localities examined, suggests that it may well have been established here for some time.

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